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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------|------------------|
| 09/503,673 | 02/14/2000 | Meenarachagan Vishnu | FORE-54 | 7017 |
| 7590 Ansel M Schwartz One Sterling Plaza 201 N Craig Street Suite 304 Pittsburgh, PA 15213 | | 01/25/2007 | EXAMINER TRAN, THIEN D | |
| | | | ART UNIT 2616 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | |
|------------------------------|------------------------|-----------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/503,673 | VISHNU, MEENARACHAGAN |
| | Examiner | Art Unit |
| | Thien D. Tran | 2616 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 October 2006.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3-16,20-28,30,31 and 33-39 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 16,20-25,36 and 39 is/are allowed.

6) Claim(s) 1,3,26-28,33-35,37 and 38 is/are rejected.

7) Claim(s) 4-16,20-25,30,31 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
5) Notice of Informal Patent Application
6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 37, 38 are rejected under 35 U.S.C. 102(b) as being participated by Ganmukhi et al (U.S Patent No. 5,850,399 B1).

Regarding claims 37, 38 Ganmukhi discloses an apparatus for serving connections comprising:

a server QoS, col.3 line 6;

a queue (*memory*), hereinafter memory, in which data of the connections is stored, said memory connected to the server, col.3 line 40; and

a hierarchical scheduler which schedules when the data of the connections in the memory is to receive service from the server, and provide a minimum specified bandwidth to each connection, col.3 line 55, col.4 line 38, col.5 line 9, the scheduler connected to said server and said memory, figure 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 26, 27, 28, 33, 34, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganmukhi et al (U.S Patent No. 5,850,399 B1) in the view of Lahat et al (U.S Patent No. 6,417,944).

Regarding claims 1, Ganmukhi discloses schedulers a data scheduling for service according to QoS (server) comprising:

a first level schedule (*first level generator*), hereinafter first level generator, associated with groups of connections $G1 = 42, 52, 62$, $G2 = 72$, $G3 = 32$, figure 1; and a second and third level schedules (*second level generator*), hereinafter second level generator, associated corresponding to the groups of connections $G1 = 42, 52, 62$, $G2 = 72$, $G3 = 32$, said first level generator identifying which connections to be outputted to the second level generation for services in the next scheduling (*in the second level generator corresponds to a group in the first level generator that are to be considered for service*), col.3 lines 5-20, said second level generator identifies the connections corresponding to the group 20, 22, 17, 32, 42, 52, 62, 72, to receive service from the server according to the priority, said second level generator in connection with said first level generator, col.3 lines 1-15, wherein the level generators providing a minimum bandwidth to each connection considered for service, col.3 line 55, col.4 line 38, col.5 line 9.

Ganmukhi does not disclose a filter mechanism, which filters out (idle connections) inactive groups of connections associated with schedules in the

hierarchical schedule. Lahat discloses a filter for filtering and allowing certain wavelengths for outputting, col.8 lines 40-55. Therefore, it would have been obvious to one having ordinary skill in the art to have a schedule used the filter to filter inactive connections so that memories in the schedule can be utilized more efficient.

Regarding claims 3, 26, Ganmukhi discloses an apparatus for serving connections comprising:

a server QoS, col.3 line 6;

a queue (memory), hereinafter memory, in which data of the connections is stored, said memory connected to the server, col.3 line 40; and

a hierarchical scheduler which schedules when the data of the connections in the memory is to receive service from the server, and provide a minimum specified bandwidth to each connection, col.3 line 55, col.4 line 38, col.5 line 9, the scheduler connected to said server and said memory, figure 1.

Ganmukhi does not disclose a filter mechanism, which filters out (idle connections) inactive groups of connections associated with schedules in the hierarchical schedule. Lahat discloses a filter for filtering and allowing certain wavelengths for outputting, col.8 lines 40-55. Therefore, it would have been obvious to one having ordinary skill in the art to have a schedule used the filter to filter inactive connections so that memories in the schedule can be utilized more efficient.

Regarding claim 27, Ganmukhi discloses an apparatus for serving connections comprising:

a data scheduling for service according to QoS (server), col.3 line 6;

a queue (memory), hereinafter memory, in which data of the connections is stored, said memory connected to the server, col.3 line 40; and

a hierarchical scheduler having a schedule bitmap which schedule when cells of the connection in the memory are to receive service from the server, col.5 line 9, col.3 lines 60-65.

Ganmukhi does not disclose that bitmap generator for generating schedule bitmap indicating the group to be scheduled for service, which would have been well known method for generating data bits in communication encoder. Lahat, for example, discloses a generator for generating bitmap so that data can be composed by number of bits in a proper form for communication. See col.10 lines 1-20. Therefore, it would have been obvious to one having ordinary skill in the art to implement the feature of generating bitmap so that data can be composed by number of bits in a proper form for communication.

Ganmukhi does not disclose a filter mechanism, which filters out (idle connections) inactive groups of connections associated with schedules in the hierarchical schedule. Lahat discloses a filter for filtering and allowing certain wavelengths for outputting, col.8 lines 40-55. Therefore, it would have been obvious to one having ordinary skill in the art to have a schedule used the filter to filter inactive connections so that memories in the schedule can be utilized more efficient.

Regarding claim 28, Ganmukhi does not disclose the intercell intervals are inversely proportional to bandwidth allocated to a connection. However, it would have been obvious to one having ordinary skill in the art to have the intercell intervals are

inversely proportional to bandwidth allocated to a connection in the scheduler of Ganmukhi so that the bandwidth can be calculated for each connection properly.

Regarding claim 33 Ganmukhi discloses an apparatus for serving connections comprising:

a data scheduling for service according to QoS (server), col.3 line 6;
a queue (memory), hereinafter memory, in which data of the connections is stored, said memory connected to the server, col.3 line 40; and
a hierarchical scheduler having a schedule bitmap which schedule when cells of the connection in the memory are to receive service from the server and provides a minimum specified bandwidth to each connection, col.5 line 9, the scheduler connected to the server, col.3 lines 60-65

Ganmukhi does not disclose a filter mechanism, which filters out (idle connections) inactive groups of connections associated with schedules in the hierarchical schedule. Lahat discloses a filter for filtering and allowing certain wavelengths for outputting, col.8 lines 40-55. Therefore, it would have been obvious to one having ordinary skill in the art to have a schedule used the filter to filter inactive connections so that memories in the schedule can be utilized more efficient.

Regarding claims 34, 35, Ganmukhi discloses an apparatus for serving connections comprising:

a data scheduling for service according to QoS (server), col.3 line 6;
a queue (memory), hereinafter memory, in which data of the connections is stored, said memory connected to the server, col.3 line 40.

Ganmukhi does not disclose that bitmap generator for generating schedule bitmap indicating the group to be scheduled for service, which would have been well known method for generating data bits in communication encoder. Lahat, for example, discloses a generator for generating bitmap so that data can be composed by number of bits in a proper form for communication. See col.10 lines 1-20. Therefore, it would have been obvious to one having ordinary skill in the art to implement the feature of generating bitmap so that data can be composed by number of bits in a proper form for communication.

Allowable Subject Matter

5. Claims 4-15, 30, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claims 16, 20-25, 36, 39 are allowed, because the prior arts fail to teach or fairly suggest an apparatus for serving connection comprising: a scheduler having a schedule bitmap and active bitmaps which indicate which connection are active, the scheduler filters out inactive connections from the schedule bitmap and ANDing schedule bitmap with the active bitmaps, the scheduler schedules when cells of the connection in the memory are to receive service from the server, the scheduler connected to a server.

Response to Arguments

7. Applicant's arguments filed 10/26/2006 have been fully considered but they are not persuasive.

Applicant argues that Ganmukhi does not disclose a scheduler providing a minimum specified bandwidth to each connection. In response to the argument, please refer to the rejection of claim 1.

Applicant argues that Ganmukhi does not disclose a scheduler having a filter for filtering out the inactive connections. In response to the argument, please refer to the 103 rejection of claim 1.

Applicant argues that Ganmukhi does not disclose a scheduler having schedule bitmaps, which can contain multiple bits per connection to schedule different type of bandwidth. In response to the argument, even though, Ganmukhi does not disclose scheduler having schedule bitmaps, which can contain multiple bits per connection to schedule different type of bandwidth, which is a well known method for generating data bits in communication encoder. Lahat, for example, discloses a generator for generating bitmap so that data can be composed by number of bits in a proper form for communication. See col.10 lines 1-20. Therefore, it would have been obvious to one having ordinary skill in the art to implement the feature of scheduler having schedule bitmaps, which can contain multiple bits per connection to schedule different type of bandwidth so that data can be composed by number of bits in a proper form for communication.

Conclusion

8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached on (571) 272-7629. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

Patent Examiner

Thien Tran



DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600